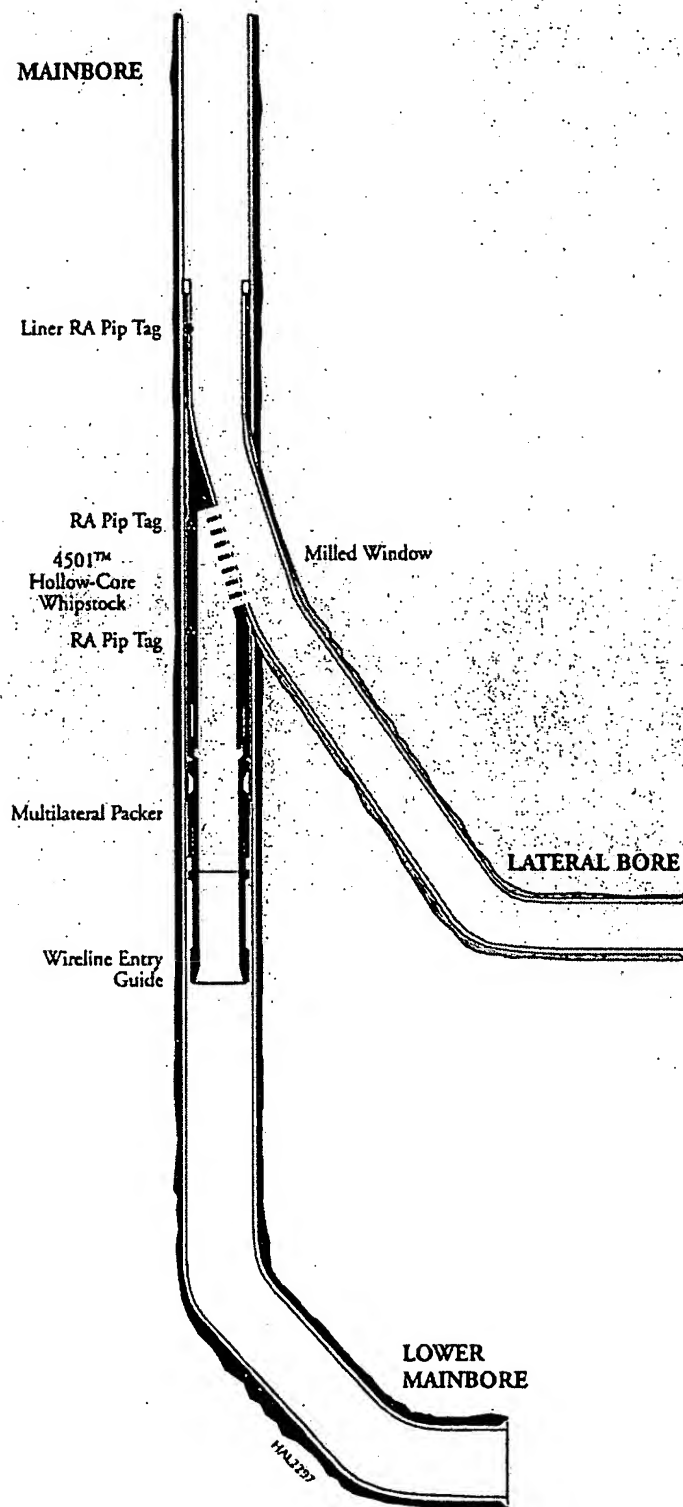


# Multilateral Services Profile

## 4501™ Low-Side Perforation System ExitMaster™ Milled Casing Exit Systems



### Application

The 4501™ system is designed for use in existing wells that are to be re-entered to develop additional zones or reserves. This system has a low operational risk and allows mainbore production, which can be shut off by using a sleeve in the lateral casing to isolate perforations across the whipstock. Typically, the producing zone in the main well will have declined, but not to the point of complete abandonment. The 4501™ system allows the creation of a lateral to access the new target zone while maintaining production from the original main well. The ease and simplicity of lateral construction allow any conventional completion options while foregoing access to the lower main wellbore. Operations such as production logs, stimulation, clean out, water and gas isolation, water and gas shut off, and additional perforations can be performed on the lateral liner.

### Features

- Hollow core whipstock used to create window
- Full-bore lateral access
- Access to lower main wellbore is hydraulic only
- Gravity-biased perforating assembly
- No limit to liner lap length
- Whipstock not pulled to create junction

### Benefits

- Applicable to existing wells (re-entry)
- Mechanical integrity of level 4 junction with cement
- Hydraulic isolation of level 4 with cement
- Minimal risk of installation for a level 4 system
- Allows main well to be produced to lower economic threshold
- Isolation and flow control of lateral and mainbores achieved with conventional completion equipment

# Multilateral Services *Specifications*

## 4501™ Low-Side Perforation System ExitMaster™ Milled Casing Exit Systems

### Typical Installation Sequence:

- Remove completion from existing well.
- Run in hole and set packer and whipstock.
- Mill window in main well casing (three-step operation).
- Drill lateral as required.
- Run in hole lateral liner and cement as required.
- Perforate lower lateral and whipstock face.
- Install completion and flow well.

4501™ System Specifications		
TAMIL Level 4		
System casing size	7 in. 177.8 mm	9-5/8 in. 244.5 mm
Casing weight	26-32 lb/ft	47-53.5 lb/ft
Window type	Milled	
Lateral liner type	Perforated lateral liner with hollow whipstock	
Lateral hole size	6-1/8 to 5-7/8 in. 152.4 mm	8-1/2 in. 215.9 mm
Lateral liner size	4-1/2 in. to 5 in. 114.3 mm	7 in. 177.8 mm
Lower mainbore access	Perforations	
Pressure isolation from above/below	5,000 psi/5,000 psi	3,500 psi/5,000 psi

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DRILLING SERVICES

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